

Claims

- [c1] 1. An input apparatus comprising:
input means having multiple keys some of which are assigned to six dots for Braille;
key identification means for identifying said keys that are manipulated;
Braille specification means for specifying Braille dot combinations based on the locations of said keys identified by said key identification means;
character conversion means for converting said specified Braille dot combinations into corresponding characters; and
character data output means for outputting character data obtained by said character conversion means.
- [c2] 2. The input apparatus according to claim 1, further comprising:
speech synthesis means for generating speech synthesis data based on said character data produced by said character data output means; and
speech output means for outputting speech based on said speech synthesis data.
- [c3] 3. A communication terminal comprising:
a group of keys arranged in a multiple row, multiple column matrix;
a key detector for detecting manipulations of said keys;
a processor for performing a process in accordance with said manipulations of said keys detected by said key detector; and
a communication unit for communicating with an external unit,
wherein six keys, arranged in two columns and three rows, are allocated for dots for Braille; and
wherein said processor specifies Braille dot combinations corresponding to said manipulations of said keys detected by said key detector, and converts said specified Braille dot combinations into characters that are output through said communication unit.
- [c4] 4. The communication terminal according to claim 3, further comprising:
a speech output unit for outputting speech,
wherein said processor generates speech synthesis data based on said obtained

characters, and

wherein said speech output unit outputs speech based on said speech synthesis data.

- [c5] 5.The communication terminal according to claim 3, wherein a first mode for allocating ordinary numbers, such as 0 to 9, or symbols, such as * and #, and a second mode for allocating dots for Braille are available for said keys, and wherein said processor can switch between said first mode and said second mode.
- [c6] 6.The communication terminal according to claim 5, wherein said processor can switch among said first mode, said second mode and a third mode for allocating characters for said keys.
- [c7] 7.The communication terminal according to claim 3, further comprising:
a tone generator for generating different tones for each row and column of said keys,
wherein, when n keys are manipulated and said key detector has detected tones corresponding to keys of two columns and n rows, it is assumed that said keys at the locations whereat said two columns and n rows intersect have been manipulated.
- [c8] 8.The communication terminal according to claim 3, wherein, when the same key is manipulated at multiple times in said second mode, said processor regards such manipulations as a single operation.
- [c9] 9.A portable communication terminal comprising:
a key body having operating keys on a surface; and
a display body, pivotally connected to said key body, having a display panel on a surface,
wherein said key body and said display body can be folded together so that said surface of said key body on which said operating keys are positioned and said surface of said display body on which said display panel is positioned are exposed.
- [c10] 10.The portable communication terminal according to claim 9, further

comprising:

a key detector for detecting manipulations of said operating keys;

a processor for performing a process in accordance with said manipulations of said operating keys detected by said key detector; and

a communication unit for outputting a signal to the outside based on the process performed by said processor,

wherein, said processor allocates six operating keys among said operating keys, arranged in two columns and three rows, for dots used to specify a Braille dot combination that corresponds to said manipulations of said operating keys detected by said key detector, and outputs a signal representing a character corresponding to said specified Braille dot combination through said communication unit as said output signal.

[c11]

11.The portable communication terminal according to claim 10, further comprising:

a speech output unit for outputting speech,

wherein said processor synthesizes speech based on characters obtained by conversion, and permits said speech output unit to release said speech.

[c12]

12.The portable communication terminal according to claim 11, wherein said processor allocates dots for said Braille keys in a column at one end of said key body and in a column at the other end.

[c13]

13.A feedback system wherein, in accordance with an operation performed by a user terminal which has accessed a server of service provider, said server feeds back speech to said terminal; wherein said terminal includes operating keys for data entry by a user,

a communication unit for communicating with said server,

a signal generator for generating a signal in accordance with the manipulation of said operating keys, and for transmitting said signal through said communication unit, and

a speech output unit for outputting speech based on a feedback signal received through said communication unit; and wherein said server includes

a reception unit for receiving said signal from said terminal,

a character converter for converting said signal received by said reception unit into a corresponding character,
a speech synthesis signal generator for generating a speech synthesis signal based on said character, and
a transmission unit for transmitting said speech synthesis signal as said feedback signal.

[c14] 14.The feedback system according to claim 13, wherein based on said signal received, said character converter specifies a Braille dot combination corresponding to the manipulation of said operating keys, and converts said Braille dot combination into a corresponding character.

[c15] 15.The feedback system according to claim 13, wherein said server further includes:
a speech message output unit for outputting, as a speech signal, a message requesting that said terminal enter data.

[c16] 16.The feedback system according to claim 13, wherein said server further includes:
a character string generator for generating a character string by sequentially accumulating characters obtained by said character converter; and
a process execution unit for accepting a request from said user comprising said character string generated by said character string generator, and for performing a process in accordance with said request.

[c17] 17.A speech feedback server comprising:
a reception unit for receiving signals from an external terminal;
a key identification unit for, based on said received signals, identifying operating keys manipulated at said external terminal;
a Braille specification unit for specifying a Braille dot combination corresponding to the manipulations of said operating keys identified by said key identification unit;
a character converter for converting said Braille dot combination specified by said Braille specification unit into a corresponding character;
a character string generator for generating a character string by sequentially

accumulating characters obtained by said character converter; and
a process execution unit for performing a process in accordance with a user's
request comprising said character string generated by said character string
generator.

[c18]

18.A communication terminal comprising:

a group of keys arranged in a multiple column, multiple row matrix;

a key detector for detecting manipulations of said keys;

a signal transmission unit for transmitting, to an external host server, an output
signal that is consonant with said manipulations of said keys detected by said
key detector;

a reception unit for receiving, from said host server, a speech response signal
that is generated by said host server in accordance with a character that
corresponds to a Braille dot combination obtained by conversion based on said
output signal; and

a speech output unit for outputting speech based on said speech response
signal.